ENVIRONMENTAL INVESTIGATION OF THE LONG-TERM USE OF SHIP SHOAL SAND RESOURCES FOR LARGE-SCALE BEACH AND COASTAL RESTORATION IN LOUISIANA

Interim Report for Year 1

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INTORDUCTION

At a very minimum, two barrier islands located along the Isles Dernieres will undergo large-scale restoration at Whiskey west flank and New Cut using high quality sand dredged from Ship Shoal. Physical field and numerical modeling studies conducted on Ship Shoal indicate that it exerts a significant influence on regional hydrodynamics, reducing wave energy and modulating current velocity, particularly during storm events. Although wave modeling results show favorable results relative to potential effects of sand extraction on the local wave climate, recommendation have been made suggesting site-specific numerical modeling, using state-of-the-art models such as SWAN when the precise volumes and dimensions of borrow sites are finalized, particularly for large-scale, cumulative events. Additionally, there is a paucity of biological information that would permit a proper assessment of dredging impacts on the local biology given the probable long-term use of the shoal as a sand resource area.

OBJECTIVES

The objectives of the study are to provide biological, physical, and other pertinent information which can be used by MMS analysts during the evaluation of impacts associated with large-scale, cumulative extraction of sand from blocks which located on Ship Shoal.

PROGRESS IN YEAR 1

All bottom boundary layer instrumentation has been prepared and re-fabricated for deployment at Ship Shoal. All ADV's were mounted on new tripods and subsequently treated with anti fowling paint. New computers were inserted into the main instrumentation chassis and sealed for deployment. Current meters were re-aligned with co-located optical backscatter sensors and affixed securely to the main instrumentation tripod. Site surveys were conducted to ensure instrumentation could be tethered to platform infrastructure at the study site. Deployment will occur early in 2005 when a suitable weather window is found.

We have initiated preparation for the meio- and macro-benthic focus of the project based upon the revised Spring 2006 initiation date for sand mining on Ship Shoal. Specifically:

1) We have obtained all necessary permits from the State of Louisiana and Louisiana State University and coordinated data/specimen archiving with the Smithsonian and the National Ocean Data Center. We have requested permission from the National Marine Fisheries Service to conduct SEAMAP-compatible trawls as these relate to the use of bycatch reduction devices and trawl times.

2) We have devised a revised sampling schedule for Year One in consultation with the Minerals Management Service, Louisiana Department of Natural Resources, National Marine Fisheries Service, and the Louisiana Department of Wildlife and Fisheries. These revisions will allow us to maximize the statistical significance of before impact data we can collect on Ship Shoal during 2005 and 2006, consistent with the

BACI sampling program outlined in our original contract. To accomplish this we will sample 26 benthic stations and 7 trawl stations (across the Shoal during in the following four months:

a) May 2005. Beginning of the white shrimp annual spawning cycle. Catch should include both first-time spawners and surviving members of the previous spawning stock
b) August 2005. Middle of the white shrimp annual spawning cycle. Beginning of the offshore recruitment of zero-year class white shrimp.
c) October 2005. End of both the white shrimp annual spawning cycle and period of maximum estuarine growth rate. Peak period of both offshore recruitment of zero-year class white shrimp and offshore commercial white shrimp catch at 0-5 fathoms.
d) March 2006. End of the 'offshore white shrimp year'. Before on-set of the annual spawning cycle. Period of lowest commercial catch of offshore whites.

Basic elements of this revised sampling schedule will be reviewed with the Louisiana Sand Management Task force at their February 2, 2005 meeting. Tentative dates for all four sampling trips have been established with LUMCON for their Acadiana.

3) We are currently recruiting a graduate student, student workers, and devising our laboratory procedures in anticipation of our first sampling trip.